

Claims

What is claimed is:

1. A tricistronic vector construct comprising:

a prokaryotic promoter;

a first nucleic acid sequence encoding an immunoglobulin-presenting polypeptide;

a second nucleic acid sequence encoding a first immunoglobulin (Ig) polypeptide;

a third nucleic acid sequence encoding a second Ig polypeptide;

a first associating agent fused to or comprised within said Ig-presenting polypeptide; and

a second associating agent fused to or comprised within said first Ig polypeptide,

wherein said first, second and third nucleic acid sequences are under the control of said promoter, and wherein upon expression of said tricistronic vector, (i) said Ig-presenting polypeptide and said first Ig polypeptide associate via their respective associating agents and (ii) said first and second Ig polypeptides self-associate.

2. The tricistronic vector construct according to claim 1, wherein said Ig-presenting polypeptide is a phage coat protein.

3. The tricistronic vector construct according to claim 2, wherein said first and second Ig polypeptides self-associate to form a Fab or other functional Ig fragment.

4. The tricistronic vector construct according to claim 3, wherein said phage coat protein is a gIII protein or a functional fragment thereof.

5. The tricistronic vector construct according to claim 4, wherein said gIII functional fragment comprises an N-terminal domain of gIII.

6. The tricistronic vector construct according to claim 2, wherein said first and second associating agents associate with each other via a disulfide bond.

7. The tricistronic vector construct according to claim 6, wherein the first or second associating agent is a cysteine residue.

8. The tricistronic vector construct according to claim 7, wherein the first and second associating agents are each a cysteine residue.

9. The tricistronic vector construct according to claim 1, wherein the first and second Ig polypeptides self-associate via non-covalent interactions.

10. The tricistronic vector construct according to claim 1, further comprising a first secretory signal sequence in the same reading frame as the nucleic acid sequence encoding the first Ig polypeptide.

11. The tricistronic vector construct according to claim 10, further comprising a second secretory signal sequence in the same reading frame as the nucleic acid sequence encoding the second Ig polypeptide.

12. The tricistronic vector construct according to claim 11, further comprising a third secretory signal sequence in the same reading frame as the nucleic acid sequence encoding the Ig-presenting polypeptide.

13. The tricistronic vector construct according to claim 2, wherein said vector is a phagemid vector.

14. The tricistronic vector construct according to claim 1, wherein the associating agents become disassociated in solution upon the addition of a reducing agent.

15. The tricistronic vector construct according to claim 1, wherein said second associating agent is fused to said first Ig polypeptide via a peptide linker.

16. The tricistronic vector construct according to claim 12, wherein said first, second and secretory signal sequences are prokaryotic signal sequences.

17. The tricistronic vector construct according to claim 1, further comprising a ribosome binding site positioned 5'-primeward of the nucleic acid sequence encoding the second Ig polypeptide.

18. The tricistronic vector construct according to claim 17, further comprising a ribosome binding site positioned 5'-primeward of the nucleic acid sequence encoding the first Ig polypeptide.
19. The tricistronic vector construct according to claim 18, further comprising a ribosome binding site positioned 5'-primeward of the nucleic acid sequence encoding the Ig-presenting polypeptide.